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ENTERED

RAW SEQUENCE LISTING DATE: 07/02/2002 PATENT APPLICATION: US/10/078,650 TIME: 14:23:13

Input Set : A:\06501-101001.txt

4 <110> APPLICANT: Fujimoto, Katsumi

4	<110>	APPLICA	ANI: FU	י טוווב נ	LU, .	Nacs	umi									
5	' .															
6		Kato, Yukio														
9	<120>	20> TITLE OF INVENTION: NOVEL BHLH TYPE TRANSCRIPTION FACTOR														
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39	aacago	cagtt ga	aac atg	gac	gaa	gga	att	cct	cat	ttg	caa	gag	aga	cag	170	
40			Met	Asp	Glu	Gly	Ile	Pro	His	Leu	Gln	Glu	Arg	Gln		
41			1				5					10				
43	tta ct	g gaa d	cat aga	gat	ttt	ata	gga	ctg	gac	tat	tcc	tct	ttg	tat	218	
44	Leu Le	eu Glu E	His Arg	Asp	Phe	Ile	Gly	Leu	Asp	Tyr	Ser	Ser	Leu	Tyr		
45		15				20					25					
47	atg to	jt aaa d	ccc aaa	agg	agc	atg	aaa	cga	gac	gac	acc	aag	gat	acc	266	
48	Met Cy	s Lys I	Pro Lys	Arg	Ser	Met	Lys	Arg	Asp	Asp	Thr	Lys	Asp	Thr		
49	3	30			35					40						
51	tac aa	a tta c	ccg cac	aga	tta	ata	gaa	aag	aaa	aga	aga	gac	cga	att	314	
52	Tyr Ly	s Leu E	Pro His	Arg	Leu	Ile	Glu	Lys	Lys	Arg	Arg	Asp	Arg	Ile		
53	45			50					55					60		
55	aat ga	a tġc a	att gct	cag	ctg	aaa	gat	tta	ctg	cct	gaa	cat	ctg	aaa	362	
56	Asn Gl	u Cys 1	Ile Ala	Gln	Leu	Lys	Asp	Leu	Leu	Pro	Glu	His	Leu	Lys		
57			65					70					75			
59	ttg ac	a act o	ctg gga	cat	ctg	gag	aaa	gct	gta	gtc	ttg	gaa	tta	act	410	
60	Leu Th	r Thr I	Leu Gly	His	Leu	Glu	Lys	Ala	Val	Val	Leu	Glu	Leu	Thr		
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RAW SEQUENCE LISTING DATE: 07/02/2002 PATENT APPLICATION: US/10/078,650 TIME: 14:23:13

Input Set : A:\06501-101001.txt

104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105																			
67 aag atta att get tta cag aat ggg gag cga tct ctg aaa tcg ccc att 68 Lys Ile Ile Ala Leu Gln Asn Gly Glu Arg Ser Leu Lys Ser Pro Ile 69 110 115 120 120 115 120 120 115 120 120 120 120 120 120 120 120 120 120			Leu	Lys		Leu	Lys	Ala	Leu		Ala	Leu	Thr	Glu		Gln	His	Gln	
68 Lys Tile Tile Ala Leu Gin Asn Gly Glu Arg Ser Leu Lys Ser Pro Tile 69 110 115 120 71 cag too gac ttg gat goog ttc cac too gag att caa aca tgc goc aaa 72 Gin Ser Asp Leu Asp Ala Phe His Ser Gly Phe Gin Thr Cys Ala Lys 73 125 130 135 140 75 gaa gtc ttg caa tac ctc too cgg ttt gag agc tgg aca coc agg gag 76 Glu Val Leu Gin Tyr Leu Ser Arg Phe Glu Ser Trp Thr Pro Arg Glu 77 145 150 155 79 ccg cgg tgt gtc cag ctg atc aac cac ttg cac gcc gtg gcc acc cag 80 Pro Arg Cys Val Gin Leu Tile Asn His Leu His Ala Val Ala Thr Gin 81 160 165 170 83 ttc ttg coc acc ccg cag ctg ttg act caa cag gtc ct ctg agc aaa 84 Phe Leu Pro Thr Pro Gin Leu Leu Thr Gin Gin Val Pro Leu Ser Lys 85 175 180 185 87 ggc acc ggc gct cct tcg gcc gcc ggg gcc gcc g			aan	ata		act	tta	сап	aat	aaa	σασ	cga	tet	cta	aaa	tca	ccc	at.t.	506
99 110 115 120 71 cag tcc gac ttg gat gcg ttc cac tcg ggat ttc caa aca tgc gcc aaa 72 Gln Ser Asp Leu Asp Ala Phe His Ser Gly Phe Gln Thr Cys Ala Lys 73 125 130 135 135 140 75 gaa gtc ttg caa tac ctc tcc cgg ttt gag agc tgg aca ccc agg gag 76 Glu Val Leu Gln Tyr Leu Ser Arg Phe Glu Ser Trp Thr Pro Arg Glu 77 145 150 150 155 79 ccg cgg tgt gtc cag ctg atc aca cct tg cac gcc gtg gcc acc cag 80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 160 165 170 81 tct ttg ccc acc ccg cag ctg ttg act caa cag gtc cct ctg agc aaa 698 4 Phe Leu Pro Thr Pro Gln Leu Leu Thr Gln Gln Val Pro Leu Ser Lys 175 180 185 87 ggc acc ggc gtc ccc tcg gcc gcg ggt tcc ggc gcc gc			aag	414	#1 -	31-	tou	Cla	7.00	233	01.	7 2 2	200	TOU	Tre	Cor	Dro	T10	
71 cag tcc gac ttg gat gcg ttc cac tcg gga ttt caa aca tgc gcc aaa 72 Gln Ser Asp Leu Asp Ala Phe His Ser Gly Phe Gln Thr Cys Ala Lys 73 125 130 135 '140 75 gaa gtc ttg caa tac ctc tcc cgg ttt gag agc tgg aca ccc agg gag 76 Glu Val Leu Gln Tyr Leu Ser Arg Phe Glu Ser Ttp Thr Pro Arg Glu 77 145 150 155 79 ccg cgg tg tg tcc cag ctg atc aac cac ttg cac gcc gtg gcc acc cag 80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 81 160 165 170 83 ttc ttg ccc acc ccg cag ctg ttg act caa cag gtc cct ctg agc aaa 698 84 Phe Leu Pro Thr Pro Gln Leu Leu Thr Gln Gln Val Pro Leu Ser Lys 85 175 180 185 87 ggc acc ggg gct ccc tcg gcc gcg ggg tcc gcc g			ьуs		шe	Ата	ьeu	GIII		GIY	GIU	AIG	ser		гуѕ	ser	PIO	116	
72 Gln Ser Asp Leu Asp Ala Phe His Ser Cly Phe Gln Thr Cys Ala Lys 73 125 73 130 740 75 gaa gtc ttg caa tac ctc tcc cgg ttt gag agc tgg aca ccc agg gag 76 Glu Val Leu Gln Tyr Leu Ser Arg Phe Glu Ser Trp Thr Pro Arg Glu 77 145 79 ccg cgg tgt gtc cag ctg atc aac cac ttg cac gcc gtg gcc acc cag 80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 81 81 81 81 81 82 84 Phe Leu Pro Thr Pro Gln Leu Leu Thr Gln Gln Val Pro Leu Ser Lys 85 87 ggc acc ggc gct ccc tcg gcc gcg ggg tcc gcg gcc ccc tgc ctg 88 Gly Thr Gly Ala Pro Ser Ala Ala Gly Ser Ala Ala Ala Pro Cys Leu 89 190 195 200 91 gag cgc gcg ggg cag aag ctg gag ccc ctc gcc tac tgc gtg ccc gcg 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 93 atc cag cgg act cag ccc agc gcc gag acc gcc gag acc gac ga																			
135	7	71	cag	tcc	gac	ttg	gat	gcg	ttc	cac	tcg	gga	ttt	caa	aca	tgc	gcc	aaa	554
135	7	72	Gln	Ser	Asp	Leu	Asp	Ala	Phe	His	Ser	Gly	Phe	Gln	Thr	Cys	Ala	Lys	
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76 Glu Val Leu Gln Tyr Leu Ser Arg Phe Glu Ser Trp Thr Pro Arg Glu 77							+		+ 00	~~~	+++	~ ~ ~		+ aa	202	000			602
77																			002
79 ccg cgg tgt gtc cag ctg atc aac cac ttg cac gcc gtg gcc acc cag 80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 81	1	/6	GLu	Val	Leu	GIn	Tyr	Leu	ser	Arg	Pne		ser	Trp	THE	Pro		GIU	
80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 81	7	77					145					150					155		
80 Pro Arg Cys Val Gln Leu Ile Asn His Leu His Ala Val Ala Thr Gln 81	7	79	ccq	cqq	tqt	gtc	cag	ctg	atc	aac	cac	ttg	cac	gcc	gtg	gcc	acc	cag	650
81																			
83 ttc ttg ccc acc ccg cag ctg ttg act caa cag gtc cct ctg agc aaa 84 Phe Leu Pro Thr Pro Gln Leu Leu Thr Gln Gln Val Pro Leu Ser Lys 85				5	0,0														
84 Phe Leu Pro Thr Pro Gin Leu Leu Thr Gin Gin Val Pro Leu Ser Lys 85														~+ a	aat		200	222	608
85																			090
87 ggc acc ggc gct ccc tcg gcc gcc ggg tcc gcg gcc ccc tgc ctg 88 Gly Thr Gly Ala Pro Ser Ala Ala Gly Ser Ala Ala Ala Pro Cys Leu 89 190 195 200 91 gag gcg cgg ggg cag aag ctg gag ccc ctc gcc tac tgc gtg ccc gtc 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 210 215 220 95 atc cag cgg act cag ccc agc gcc gag ctc gcc gcc gag aac gac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 97 225 230 235 99 gac acc gac agc ggc tac ggc gag gcc gag gcc ggc gag acc gg 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101 240 245 250 103 gag aaa ggc aaa ggc ggg ggg ggg ggc ggc	8	34	Phe	Leu	Pro	Thr	Pro	Gln	Leu	Leu	Thr	GIn	GIn	Val	Pro	Leu	Ser	Lys	
88 Gly Thr Gly Ala Pro Ser Ala Ala Gly Ser Ala Ala Ala Pro Cys Leu 89 190 195 200 91 gag cgc gcg gcg gag aag ctg gag ccc ctc gcc tac tgc gtg ccc gtc 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 210 215 220 95 atc cag cgg act cag ccc agc gcc gag ctc gcc gcc gag aac gac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 97 225 230 99 gac acc gac agc gcg tac ggc ggc gaa gcc ggc gag acc gcc 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101 240 245 250 103 gag aaa ggc aaa ggc ggg ggg ggg agc cgc gtc acc atc aag cag gag 104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105 255 260 265 107 cct ccc ggg gag gac tcc gcg gcg ccc aag agag atg aag ctg gat tcc 108 Pro Pro Gly Glu Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser 109 270 275 280 111 cgc ggc ggc ggc agc ggc ggc ggc gcc ggg ggc ggc	8	35			175					180					185				
88 GLy Thr GLy Ala Pro Ser Ala Ala GLy Ser Ala Ala Ala Pro Cys Leu 89 190 195 200 91 gag cgc gcg ggg cag aag ctg gag ccc ctc gcc tac tgc gtg ccc gtc 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 210 215 220 95 atc cag cgg act cag ccc agc gag ctc gcc gag aac acg ac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asp Asp Thr 97 225 230 235 99 gac acc gac agc ggc tac ggc gac gac gcc gag gcc cgg ccg gac cgc 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101 240 245 250 103 gag aaa ggc aaa ggc ggg ggg ggc ggc ggc	8	37	aac	acc	aac	act	CCC	tcq	qcc	qcc	qqq	tcc	qcq	qcc	qcc	CCC	tgc	ctg	746
89 190 195 200 91 gag cgc ggg ggg cag aag ctg gag ccc ctc gcc tac tgc gtg ccc gtc 794 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 220 93 205 210 215 220 95 atc cag cgg act cag ccc agc gcc gag ctc gcc gcc gag aac gac acg 842 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 235 99 gac acc gac agc ggc tac ggc ggc gag gcc gag gcc cgg ccg gac cgc 890 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 210 245 250 103 gag aaa ggc aaa ggc ggg ggg ggg agc cgc gtc acc atc aac aag cag gag 938 104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105 255 107 cct ccc ggg gag gac tcg ccg gcc gcc aaa agg atg aag ctg gat tcc 260 265 260 107 cct ccc ggg gag gac tcg ccc gag gcc gcc gag gcg gcg gcg gcg g																			
91 gag cgc gcg ggg cag aag ctg gag ccc ctc gcc tac tgc gtg ccc gtc 92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 210 215 220 95 atc cag cgg act cag ccc agc gcc gag ctc gcc gcc gag aac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 97 225 230 235 99 gac acc gac agc gcc ggc gag gcc ggc ggc			O I y		Gry	111.4	110	DCI			017	001					-1-		
92 Glu Arg Ala Gly Gln Lys Leu Glu Pro Leu Ala Tyr Cys Val Pro Val 93 205 210 215 220 95 atc cag cgg act cag ccc agc gcc gag ctc gcc gcg gag aac gac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 97 225 230 235 99 gac acc gac agc ggc tac ggc gaa gcc gag gcc cgg ccg gac cgc 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101 240 245 250 103 gag aaa ggc aaa ggc ggg ggg ggc agc cgc gtc acc atc aag cag gag 104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105 255 260 265 107 cct ccc ggg gag gac tcg ccg gcc cc aag agg atg aag ctg gat tcc 108 Pro Pro Gly Glu Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser 109 270 275 280 111 cgc ggc ggc ggc agc ggc ggc ggc ggc ggc									-									~+~	704
93 205	5) 1	gag	cgc	gcg	ggg	cag	aag	crg	gag	ccc	CEC	gcc	tac	Ege	grg	ccc	gle	194
95 atc cag cgg act cag ccc agc gcc gag ctc gcc gag aac gac acg 96 Ile Gln Arg Thr Gln Pro Ser Ala Glu Leu Ala Ala Glu Asn Asp Thr 97	9	92	Glu	Arg	Ala	Gly	Gln	Lys	Leu	Glu	Pro	Leu	Ala	Tyr	Cys	Val	Pro	Val	
96	Ċ	93	205					210					215					220	
96	Ç	9.5	atc	caq	caa	act	caq	ccc	agc	qcc	gag	ctc	qcc	qcc	gag	aac	gac	acq	842
97																			
99 gac acc gac age ggc tac ggc ggc gaa gcc gag gcc cgg ccg gac cgc 100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101			110	GIII	лгу	1111		110	DCI	71.LU	OI4				014	11011			
100 Asp Thr Asp Ser Gly Tyr Gly Gly Glu Ala Glu Ala Arg Pro Asp Arg 101	_																_	~~~	900
101																			090
103 gag aaa ggc aaa ggc gcg ggg gcg agc cgc gtc acc atc aag cag gag 104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105	1	L00	Asp	Thi	: Asp	Ser	· Gly	туг	: Gly	7 Gly	/ Glu	Ala	ı Glu	ı Ala	a Arg	y Pro) Asp	Arg	
104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105	1	L01				240					245	,				250)		
104 Glu Lys Gly Lys Gly Ala Gly Ala Ser Arg Val Thr Ile Lys Gln Glu 105	1	L03	gaq	aaa	a gad	aaa	gac	ge	त व व व	l dcd	ago	cgc	gto	acc	ato	aaq	r cag	gag	938
105 255 260 265 107 cct ccc ggg gag gag gac tcg ccg gcg ccc aag agg atg aag ctg gat tcc 986 108 Pro Pro Gly Glu Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser 270 275 280 111 cgc ggc ggc ggc ggc ggc ggc ggc ggc	1	104	Glu	Lvc	: G1s	7 T.V.S	Glv	A 1 a	GIV	, Ala	Ser	· Ara	v Val	Thi	r Tle	Live	Gln	Glu	
107 cct ccc ggg gag gac tcg ccg gcg ccc aag agg atg aag ctg gat tcc 108 Pro Pro Gly Glu Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser 109								1110	. 017				, , , , ,						
108 Pro Pro Gly Glu Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser 109														+			. ~~+	+	006
109																			900
111 cgc ggc ggc ggc ggc ggc ggc ggc ggc	1	L08	Pro	Pro	o Gly	/ Glu	Asp) Ser	Pro) Ala	a Pro	Lys	Arg	j Met	. Lys	Leu	ı Asp	Ser	
112 Arg Gly Gly Gly Ser Gly Gly Gly Pro Gly Gly Gly Ala Ala Ala Ala 113 285 290 295 300 115 gca gcc gcg ctt ctg ggg ccc gac cct gcc gcc gcg gcc gcg ctg ctg 116 Ala Ala Ala Leu Leu Gly Pro Asp Pro Ala Ala Ala Ala Ala Leu Leu 117 305 310 315 119 aga ccc gac gcc gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcc gcg l226 126 gcc gcc gcc gcc gcc gcc gcc l226 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc lac gtg cag l226	1	L09		270)				275	5				280)				
112 Arg Gly Gly Gly Ser Gly Gly Gly Pro Gly Gly Gly Ala Ala Ala Ala 113 285 290 295 300 115 gca gcc gcg ctt ctg ggg ccc gac cct gcc gcc gcg gcc gcg ctg ctg 116 Ala Ala Ala Leu Leu Gly Pro Asp Pro Ala Ala Ala Ala Ala Leu Leu 117 305 310 315 119 aga ccc gac gcc gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc gcc gc	1	111	cac	aac	a a a	e aac	ago	aac	gac	gac	ccq	qqq	qqq	qqq	geo	qcq	gcq	qcq	1034
113 285 290 295 300 115 gca gcc gcg ctt ctg ggg ccc gac cct gcc gcc gcg gcc gcg ctg ctg 116 Ala Ala Ala Leu Leu Gly Pro Asp Pro Ala Ala Ala Ala Ala Leu Leu 117 305 310 315 119 aga ccc gac gcc gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 1178 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcc gcg l226 1226																			
115 gca gcc gcg ctt ctg ggg ccc gac cct gcc gcc gcg gcc gcg ctg ctg 116 Ala Ala Ala Leu Leu Gly Pro Asp Pro Ala Ala Ala Ala Ala Leu Leu 117 305 310 315 119 aga ccc gac gcc gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcc gcg gcc 1226			-	_		011	OCI			011		011							
116 Ala Ala Ala Leu Leu Gly Pro Asp Pro Ala Ala Ala Ala Ala Leu Leu 117 305 310 315 119 aga ccc gac gcc gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 1130 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 1178 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcg gcc 1226																			1000
117 305 310 315 119 aga ccc gac gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 1130 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 1178 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcg gcc 1226																			1002
119 aga ccc gac gcc ctg ctc agc tcg ctg gtg gcg ttc ggc gga ggc 120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcg gcc tac gtg cag 1226	1	L16	Ala	Ala	a Ala	ı Leu	Leu	Gly	Pro) Asp	Pro	Ala	Ala	ı Ala	a Ala	ı Ala			
120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcc ctc ccc ccc gcg gcc gcc gcc gcc	1	L17					305	,				310	1				315	,	
120 Arg Pro Asp Ala Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly 121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc gcc gcc tac gtg cag 1226	1	119	aσa	ccc	gad	gee	acc	cto	cto	ago	tcq	ctq	qta	a dec	ı tto	qqq	: qqa	qqc	1130
121 320 325 330 123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 1178 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 335 340 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226																			
123 gga ggc gcg ccc ttc ccg cag ccc gcg gcc gcc gcg gcc ccc ttc tgc 124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226			_	(, wat													1	
124 Gly Gly Ala Pro Phe Pro Gln Pro Ala Ala Ala Ala Pro Phe Cys 125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226																			1170
125 335 340 345 127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226																			11/8
127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226	1	L24	Gly	Gl	/ Ala	a Pro	Phe	Pro	Glr	Pro) Ala	Ala	Ala	ı Ala	a Ala	Pro) Phe	: Cys	
127 ctg ccc ttc tgc ttc ctc tcg cct tct gca gct gcc gcc tac gtg cag 1226]	L25			335	5				340)				345	5			
				ccc	tto	tac	tto	cto	tco	cct	tct:	gca	gct	ge	goo	tac	gtq	cag	1226
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	- 1	128	וום, [pre) Pna	5 (.Ac	PHA												

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/078,650 TIME: 14:23:13

DATE: 07/02/2002

Input Set : A:\06501-101001.txt

100		250					355					360					
129		350		~-~	~			at a	~ 3 ~	224	+ > +		+20	000	aca	aca	1274
	ccc t																12/4
		Pne	Leu	ASP	гуу	370	GTA	nea	GIU	пуз	375	Deu	1 Y T	FIO	ALG	380	
	365 gct q	~~~	~~~	000	++0		a+a	at a	+20	000		ato	ccc	acc	cca		1322
	Ala A																1322
	Ald F	Ald	АТА	PIO	385	PIO	пеп	ьеи	TÄT	390	GLY	116	rio	Ата	395	AIG	
137	gca g	~~~	~~~	~~		~~~	aaa	~~~	aat		aaa	acc	acc	acc		ttc	1370
139	Ala A	yee Ala	y Cy	y Ca	31a	31 a	γCC	y C C	λla	Δla	λla	Δla	Δla	Δla	Δla	Dhe	1370
141	Ald F	нта	Ата	400	АІа	Ата	нта	мта	405	Ата	AIG	Ата	лта	410	пта	rne	
	ccc t	taa	ata		tea	ata	tta	tca		cct	CCC	αaα	aad		aac	acc	1418
	Pro (
145	PIO (cys	415	Der	Ser	Vul	пси	420	110	110	110	014	425	2114	0-1		
	gcc q	700		acc	ctc	cta	cca		σασ	ata	aca	aga		aaa	aca	cca	1466
	Ala A																
149		430	ΑΙα	1111	Бец	пец	435	1115	ULU	vu.	111.4	440	шси	0-1	,,,,,	110	
	cac		car	cac	cca	cac		cac	acc	cac	cta		ttc	acc	aaa	CCC	1514
152	His I	Dro	Cln	Hie	Dro	His	Glv	Ara	Thr	His	Leu	Pro	Phe	Ala	Glv	Pro	
	445	10	GIII	1113	110	450	011	1119	1111	1110	455	110			011	460	
	cgc g	nar	cca	aaa	aac		gag	aσc	tet	act.		σaa	σat.	ccc	t.ca		1562
156	Arg (guy Glu	Pro	Glv	Asn	Pro	Glu	Ser	Ser	Ala	Gln	Glu	Asp	Pro	Ser	Gln	
157	****9 \	0 L u	110		465	110	0_4	201		470			[-		475		
	cca q	ααa	aaσ	αаа		ccc	t.αaa	aticct	tta d		сста	ao oa	acaa	agati	Ė.		1610
	Pro (~ 5			- ,		٠ ر	, , ,	- 5 5 -			
161		<u>-1</u>	-1-	480													
	caago	caga	at o		agtta	aa aa	ataco	cctta	a ago	gaggt	ttca	agca	agagt	cqa o	gaagt	ttaaaa	1670
																aagaac	1730
165	aacaa	aaac	ag (gtati	tatqi	ig ta	acati	togga	a gti	teete	ittt	tgct	tcat	ccc o	gcaco	cacccc	1790
166	accct	tcca	ica (cacta	aacat	ic co	ctttc	cttc	e da	ccac	cage	tgta	aaaa	gat d	cctat	tgcgaa	1850
167	agaca	acto	rac 1	tctti	ttttt	t aa	atcc	ccca	a ata	aaati	tttg	ccc	ctti	ta	ggcca	atgttc	1910
																tgtggc	1970
																ggagtt	2030
																ctgttt	2090
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																agtttc	2210
173	tcace	gttg	rca a	accta	attct	g aa	agtg	gttta	a aat	tggta	atct	ctta	agtaa	act 1	tgcad	ctcgtt	2270
174	aaaga	aaac	ac g	ggago	ctggg	je ca	atcgt	caga	a act	taagt	tcag	ggaa	aggag	gat 🤉	gate	gagaag	2330
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176	ggact	tcat	ct 1	taati	ttctt	ic ta	aagto	ccata	a tat	tagat	taga	tato	ctato	ctg 1	tacag	gatttc	2450
																actctc	2510
																tgaact	2570
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																aatgct	2690
																tttctg	2750
																accaa	2810
																acttgg	2870
184	atgti	tatg	rta a	aggg	gtgag	ja ca	acaa	cagto	e tga	actat	tgag	tgag	ggaa	aat a	atct	gggtct	2930
185	tttc	gtca	igt 1	ttgg1	tgcat	t to	gctgo	ctgct	gt1	tgcta	actg	ttt	gcct	caa a	acgct	tgtgtt	2990
100	taaac	caac	at 1	taaad	etett	a or	ectad	caago	r tac	actet	ttat	gtag	catao	itt d	rttaa	atacat	3050

RAW SEQUENCE LISTING DATE: 07/02/2002 PATENT APPLICATION: US/10/078,650 TIME: 14:23:13

Input Set : A:\06501-101001.txt

188 189 190 191 192 193 194 195 196 198 199 200	tga atg aga ttc att tta aat cca taa <21 <21	gtta cttg aacc tagt taaa aacact atct tgaa 0> S 1> L 2> T	aaa gta agc att aat aca ctt aag EQ I ENGT YPE:	tatc caag tggt ttca tctt cata gttc gcaa tgca D NO H: 4 PRT	tttt ctta ttag gcac acta atgg tcag gcct aaag c2 82	gg g tg a a tc ag g at t at a aa a	gagg tgtc agtt ataa aata ctca taca ggct aacc	attt ttaa tagt attc aaaa atta cctt ctgg tacc	g ct a tt a tg t at c tt g tt t tt c tt	gaaa attt tgac tacc taat ttaa tttg	agtt taaa gata taaa atac gata tcat tacc	gca aaa tat gat tct tgg tgc	cttt atta taga tgcc atga ataa cttg tcgt	tgt aat aat aca tat cta atg	taca actg tacc ctat tgtc tagg tcacc caat	atattt atgctt tctgtg tttata tttgtg taataca acattt gtatct	3110 3170 3230 3290 3350 3410 3470 3530 3590 3641
	l <213> ORGANISM: Homo sapiens 3 <400> SEQUENCE: 2																
						Pro	His	Leu	Gln	Glu	Ara	Gln	Leu	Leu	Glu	His	
205		L		1	5				0	10	9	V-11	204		15		
		Asp	Phe	Ile	Gly	Leu	Asp	Tyr	Ser		Leu	Tyr	Met	Cys	Lys	Pro	
207	_	_		20	_		_	-	25			-		30	-		
208	Lys	Arg	Ser	Met	Lys	Arg	Asp	Asp	Thr	Lys	Asp	Thr	Tyr	Lys	Leu	Pro	
209			35					40					45				
210	His	Arg	Leu	Ile	Glu	Lys	Lys	Arg	Arg	Asp	Arg	Ile	Asn	Glu	Cys	Ile	
211		50					55					60					
		Gln	Leu	Lys	Asp	Leu	Leu	Pro	Glu	His		Lys	Leu	Thr	Thr	Leu	
213		_				70					75					80	
215					85					90				_	His 95		
216 217	Lys	Ala	Leu	Thr 100	Ala	Leu	Thr	Glu	Gln 105	Gln	His	Gln	Lys	Ile 110	Ile	Ala	
218 219	Leu	Gln	Asn 115	Gly	Glu	Arg	Ser	Leu 120	Lys	Ser	Pro	Ile	Gln 125	Ser	Asp	Leu	
220 221	Asp	Ala 130	Phe	His	Ser	Gly	Phe 135	Gln	Thr	Cys	Ala	Lys 140	Glu	Val	Leu	Gln	
222	Tyr	Leu	Ser	Arg	Phe	Glu	Ser	Trp	Thr	Pro	Arg	Glu	Pro	Arg	Cys	Val	
223						150		_			15Š			_	•	160	
224 225	Gln	Leu	Ile	Asn	His 165	Leu	His	Ala	Val	Ala 170	Thr	Gln	Phe	Leu	Pro 175	Thr	
226	Pro	Gln	Leu	Leu	Thr	Gln	Gln	Val	Pro	Leu	Ser	Lys	Gly	Thr	Gly	Ala	
227																	
228	Pro	Ser	Ala	Ala	Gly	Ser	Ala	Ala	Ala	Pro	Cys	Leu	Glu	Arg	Ala	Gly	
229			195					200			_		205			_	
230 231	Gln	Lys 210	Leu	Glu	Pro	Leu	Ala 215	Tyr	Cys	Val	Pro	Val 220	Ile	Gln	Arg	Thr	
	Gln		Ser	Ala	Glu	Len		Ala	Glu	Asn	Asn		Asn	Thr	Asp	Ser	
233		0			J_4	230			Jiu		235	TILL	٦.۵٢	T 11T	ASP	240	
		Tyr	Glv	Glv	Glu		Glu	Ala	Ara	Pro		Ara	Glu	Lvs	Gly		
235	- 4		1	1	245				5	250	F	3		-15	255	-, -	
	Gly	Ala	Gly	Ala 260		Arg	Val	Thr	Ile 265		Gln	Glu	Pro	Pro 270	Gly	Glu	

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RAW SEQUENCE LISTING DATE: 07/02/2002 PATENT APPLICATION: US/10/078,650 TIME: 14:23:13

Input Set : A:\06501-101001.txt

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238 Asp Ser Pro Ala Pro Lys Arg Met Lys Leu Asp Ser Arg Gly Gly
239 275
                              280
240 Ser Gly Gly Gly Pro Gly Gly Gly Ala Ala Ala Ala Ala Ala Leu
                          295
241 290
242 Leu Gly Pro Asp Pro Ala Ala Ala Ala Leu Leu Arg Pro Asp Ala
                                         315
                      310
244 Ala Leu Leu Ser Ser Leu Val Ala Phe Gly Gly Gly Gly Ala Pro
                                     330
                  325
246 Phe Pro Gln Pro Ala Ala Ala Ala Pro Phe Cys Leu Pro Phe Cys
                                  345
247
248 Phe Leu Ser Pro Ser Ala Ala Ala Ala Tyr Val Gln Pro Phe Leu Asp
                              360
250 Lys Ser Gly Leu Glu Lys Tyr Leu Tyr Pro Ala Ala Ala Ala Pro
                          375
252 Phe Pro Leu Leu Tyr Pro Gly Ile Pro Ala Pro Ala Ala Ala Ala Ala
                      390
                                         395
405
                                     410
256 Ser Val Leu Ser Pro Pro Pro Glu Lys Ala Gly Ala Ala Ala Thr
257 ·
              420
                                  425
258 Leu Leu Pro His Glu Val Ala Pro Leu Gly Ala Pro His Pro Gln His
                              440
260 Pro His Gly Arg Thr His Leu Pro Phe Ala Gly Pro Arg Glu Pro Gly
                          455
262 Asn Pro Glu Ser Ser Ala Gln Glu Asp Pro Ser Gln Pro Gly Lys Glu
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263 465
264 Ala Pro
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268 <211> LENGTH: 32
269 <212> TYPE: DNA
270 <213> ORGANISM: Artificial Sequence
272 <220> FEATURE:
273 <223> OTHER INFORMATION: Artificially Synthesized Primer Sequence
276 <400> SEQUENCE: 3
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277 ctattcgatg atgaagatac cccaccaaac cc
279 <210> SEQ ID NO: 4
280 <211> LENGTH: 25
281 <212> TYPE: DNA
282 <213> ORGANISM: Artificial Sequence
284 <220> FEATURE:
285 <223> OTHER INFORMATION: Artificially Synthesized Primer Sequence
288 <400> SEQUENCE: 4
                                                                       25
289 gcaagtggtt gatcagctgg acaca
291 <210> SEQ ID NO: 5
292 <211> LENGTH: 21
293 <212> TYPE: DNA
294 <213> ORGANISM: Artificial Sequence
296 <220> FEATURE:
297 <223> OTHER INFORMATION: Artificially Synthesized Primer Sequence
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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/078,650

DATE: 07/02/2002

TIME: 14:23:14

Input Set : A:\06501-101001.txt
Output Set: N:\CRF3\07022002\J078650.raw